

CLAIMS

1. An image forming method comprising the steps of:
providing a print output by a nonsilver photographic color hard copy recording system;
providing a protective layer transfer sheet comprising a thermally transferable protective layer having a single or multi-layer structure separably provided on a substrate sheet;
putting the print and the protective layer transfer sheet on top of each other and thermally transferring the protective layer onto an image in the print so as to cover at least the printed portion in the print; and
separating the substrate sheet from the protective layer transfer sheet.

2. The image forming method according to claim 1, wherein the nonsilver photographic color hard copy recording system is any one of an electrophotographic recording system, an ink jet recording system, and a thermal transfer recording system.

3. The image forming method according to claim 1, wherein the protective layer transfer sheet comprises: a substrate sheet; and, stacked on the substrate sheet in the following order, a thermally transferable release layer having a single or multi-layer structure and a thermally transferable protective layer having a single or multi-layer structure.

4. The image forming method according to claim 1, wherein the protective layer transfer sheet comprises: a substrate sheet; and, stacked on the substrate sheet in the following order, a thermally transferable release layer having a single or multi-layer structure, a thermally transferable protective layer having a single or multi-layer structure, and a thermally transferable adhesive layer having a single or multi-layer structure.

5. The image forming method according to claim 1, wherein the substrate sheet in the protective layer transfer sheet is formed of a 2 to 100 μm -thick plastic film.

6. The image forming method according to claim 5, wherein the plastic film has a specular glossiness at 45 degrees of not

more than 100%.

7. The image forming method according to claim 1, wherein the coverage of the whole layer to be transferred in the protective layer transfer sheet is 3 to 30 g/m².

8. The image forming method according to claim 1, wherein the material used in the thermally transferable protective layer is a thermoplastic resin.

9. The image forming method according to claim 8, wherein the thermoplastic resin has a Tg value of 40 to 100°C and a storage modulus at 110°C of not more than 1 x 10⁵ Pa.

10. An image forming method comprising the steps of:

providing a protective layer transfer sheet comprising a thermally transferable protective layer having a single or multi-layer structure separably provided on a substrate sheet;

providing a print output by a nonsilver photographic color hard copy recording system;

putting the protective layer transfer sheet onto the print and thermally transferring the protective layer onto an image in the print so as to cover at least the printed portion; and

separating the substrate sheet from the protective layer transfer sheet,

the thermally transferable protective layer in the protective layer transfer sheet being composed mainly of a thermoplastic resin.

11. The image forming method according to claim 10, wherein the thermoplastic resin contains at least one member selected from the group consisting of polyester resins, epoxy resins, and phenoxy resins.

12. The image forming method according to claim 10, wherein the thermoplastic resin has a glass transition temperature of 40 to 80°C.

13. The image forming method according to claim 10, wherein the thermoplastic resin has a weight average molecular weight (M_w) of not more than 20000 and a number average molecular weight (M_n) of not more than 10000.

14. The image forming method according to claim 10, wherein the thermoplastic resin comprises two or more types of

thermoplastic resins different from each other in number average molecular weight.

15. The image forming method according to claim 14, wherein one type of the thermoplastic resin constitutes a main component of the thermoplastic resin and has a number average molecular weight of not more than 10000 while the other type has a number average molecular weight of not less than 10000.

16. The image forming method according to claim 10, wherein a release layer is further provided between the thermally transferable protective layer and the substrate film.

17. The image forming method according to claim 16, wherein the release layer is composed mainly of an acrylic resin having a number average molecular weight of not more than 40000.

18. The image forming method according to claim 10, wherein the thermally transferable protective layer contains an ultraviolet absorber.

19. A protective layer transfer sheet for use in providing the image forming method according to any one of claims 1 to 18.

20. A record comprising a protective layer provided on the image of the print by the image forming method according to any one of claims 1 to 18.

21. A record produced by the image forming method according to any one of claims 1 to 18, the record having a specular glossiness at 45 degrees in the range of 70 to 110% according to JIS Z 8741.

22. An image forming method comprising the steps of:

providing a protective layer transfer sheet comprising a thermally transferable protective layer having a single or multi-layer structure separably provided on a substrate sheet;

providing a print output by a nonsilver photographic color hard copy recording system;

putting the protective layer transfer sheet onto the print and thermally transferring the protective layer onto an image in the print so as to cover at least the printed portion; and

separating the substrate sheet from the protective layer transfer sheet to form an image provided with a protective layer, the specular glossiness of the image provided with the

protective layer being 65 to 110% as measured in the angle range of 45 to 75 degrees according to JIS Z 8741.

23. An image forming method comprising the steps of:

providing a protective layer transfer sheet comprising a thermally transferable protective layer having a single or multi-layer structure separably provided on a substrate sheet;

providing a print output by a nonsilver photographic color hard copy recording system;

putting the protective layer transfer sheet onto the print and thermally transferring the protective layer onto an image in the print so as to cover at least the printed portion; and

separating the substrate sheet from the protective layer transfer sheet to form an image provided with a protective layer,

the image in the print being a record of magenta gradation, the difference between the maximum value and the minimum value of the specular glossiness in the whole gradation region of the image provided with the protective layer after the transfer of the protective layer being not more than 20% at 45 degrees as measured according to JIS Z 8741.

24. An image forming method comprising the steps of:

providing a protective layer transfer sheet comprising a thermally transferable protective layer having a single or multi-layer structure separably provided on a substrate sheet;

providing a print output by a nonsilver photographic color hard copy recording system;

putting the protective layer transfer sheet onto the print and thermally transferring the protective layer onto an image in the print so as to cover at least the printed portion; and

separating the substrate sheet from the protective layer transfer sheet to form an image provided with a protective layer,

the image in the print being a record of magenta gradation, the difference between the maximum value and the minimum value of the specular glossiness in the whole gradation region of the image provided with the protective layer after the transfer of the protective layer as measured at 45 degrees according to JIS Z 8741 being not more than 50% of the difference between the maximum value and the minimum value of the specular glossiness

in the whole gradation region of the image provided with the protective layer before the transfer of the protective layer as measured at 45 degrees according to JIS Z 8741.

25. The image forming method according to any one of claims 22 to 24, wherein the nonsilver photographic color hard copy recording system is any one of an electrophotographic recording system, an ink jet recording system, and a thermal transfer recording system.

26. The image forming method according to any one of claims 22 to 24, wherein, in the protective layer transfer sheet, the thermally transferable protective layer contains an ultraviolet absorber.

27. A protective layer transfer sheet for use in providing the image forming method according to any one of claims 22 to 24.

28. A record comprising a protective layer provided on an image in a print by the image forming method according to any one of claims 22 to 24.

29. The image forming method according to any one of claims 1, 10, 22, 23 and 24, wherein the thermally transferring step is carried out by means of a thermal head.

30. The image forming method according to any one of claims 1, 10, 22, 23 and 24, wherein the thermally transferring step is carried out by means of a heat roll.

31. The image forming method according to any one of claims 1, 10, 22, 23 and 24, wherein the protective layer transfer sheet is used in a roll form.

32. The image forming method according to any one of claims 1, 10, 22, 23 and 24, wherein the protective layer transfer sheet is used in a separated sheet form.

33. The image forming method according to any one of claims 32, wherein an assemblage comprising a mount and a protective layer transfer sheet secured on top of the mount is used.

34. The image forming method according to any one of claims 33, wherein each size of the mount, the protective layer transfer sheet and the print satisfies the following relationship:

Mount \geq Protective layer transfer sheet \geq Print.

35. The image forming method according to any one of claims 33 or 34, wherein a basis weight of the mount is in a range of 80 to 500 g/m².